Scientific Model: Law of Perpetual Informational Evolution

I. Scientific Premise

The Law of Perpetual Informational Evolution proposes that informational systems-whether cognitive, computational, or societal-undergo accelerated adaptation following each significant revelation. The process is nonlinear and recursive, shaped by feedback loops and contextual recalibration.

II. Variables and Definitions

- R: Number of discrete revelations or insights
- I(t): State of information at time t
- E: Evolution rate coefficient per revelation
- Delta I: Net change in information per time unit
- phi: Golden ratio (~1.618), used to model recursive growth

III. Mathematical Framework

Delta I = f(R) * E

Where:

f(R) is a recursive function modeling the compounding effect of revelations. One potential model:

f(R) = log2(R + 1) + R^0.5

Alternative model using the golden ratio:

I_n = I_(n-1) + (I_(n-1) * phi^r)

Where r is the revelation index.

IV. Empirical Hypothesis

Given a dataset of knowledge expansion (e.g., scientific papers, AI training models, or technological patents), we predict that:

1. The time between major paradigm shifts decreases.
2. Each shift increases the volume and complexity of dependent knowledge.

3. Attempts to freeze or finalize knowledge reduce system adaptability.

V. Applications and Testing

This law can be tested in environments such as:

- Scientific progress tracking (e.g., arXiv, PubMed archives)
- AI training efficiency curves (LLMs, RLHF)
- Cognitive development models (learning vs. forgetting curves)

Simulation environments can use R as an input variable and analyze how system adaptation scales with revelation frequency and complexity.